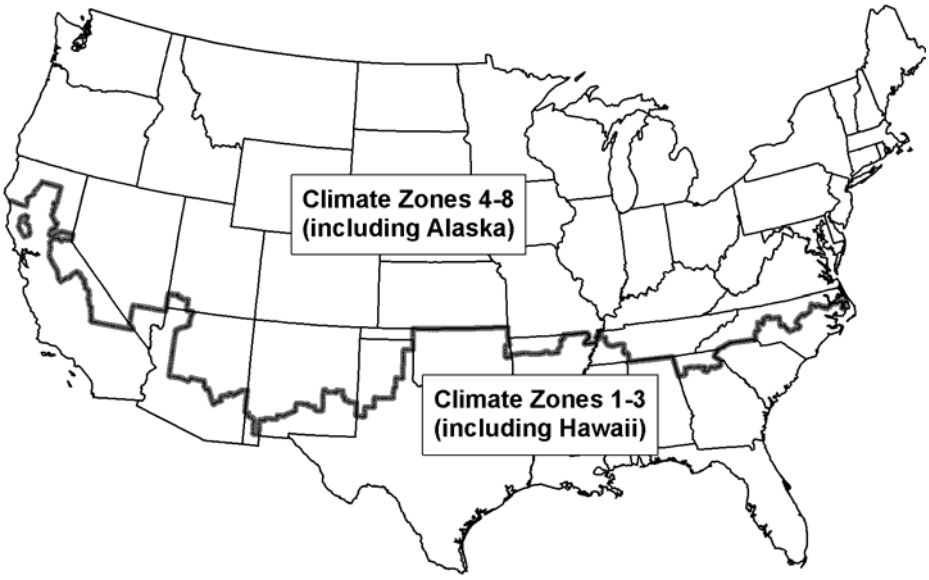
National Specifications
ENERGY STAR Qualified Homes *[DRAFT 2/8/05]*

General requirements for the ENERGY STAR Reference Home are specified in the table below. For a home to qualify as ENERGY STAR, the following three conditions must be met:

1. A home must either: a) meet the reference home requirements, or b) have an energy performance that is equivalent or better than these requirements, as determined by a RESNET-accredited rating software program.
2. A home must be verified and field tested according to the HERS Guidelines by a RESNET-accredited Provider.
3. The home must meet all state and local codes.

For county specific information refer to the ENERGY STAR Qualified Homes Verification Checklist at www.energystar.gov/homes.

	Hot Climates[1] (2004 IECC Climate Zones 1,2,3)	**Mixed and Cold Climates**[1] (2004 IECC Climate Zones 4,5,6,7,8)
Cooling Equipment[2] (Where Provided)	Right-Sized ENERGY STAR Qualified Central A/C or Heat Pump	Right-Sized 13 SEER Central A/C or ENERGY STAR Qualified Heat Pump
Heating Equipment[2]	Right-Sized Minimum Standard Furnace, Boiler[4] or ENERGY STAR Qualified Heat Pump[3]	Right-Sized ENERGY STAR Qualified Gas Furnace, Heat Pump[3], Boiler[4],or 85% AFUE Oil Furnace
Thermostat[3]	ENERGY STAR Qualified Thermostat	
Ductwork	Leakage Sealed and Tested to ≤ 4 cfm to Outdoors / 100 sq. ft.[5]; and 2004 IECC Compliant Insulation Levels[6,7]	
Envelope	Infiltration Sealed and Tested to ≤ 0.35 ac/h[8,9]; and 2004 IECC Compliant Insulation Levels[7]; and Compliance with Thermal Bypass Inspection Checklist[10]	
Windows[11]	ENERGY STAR Qualified Windows	
Water Heater	Gas 0.60 EF / Electric 0.92 EF / Oil Integrated with Space Heating Boiler[4]	
Lighting and Appliances[12,13]	Five or More ENERGY STAR Qualified Light Fixtures, Ceiling Fans and/or Appliances	



Map is for illustrative purposes only and is based on figure 301.1 from the 2004 International Energy Conservation Code.

Specification Notes
ENERGY STAR Qualified Homes *[DRAFT 2/8/05]*

1. The appropriate climate zone for each building site is determined by the 2004 International Energy Conservation Code (IECC), Figure 301.1.
2. All requirements for ENERGY STAR qualified equipment shall be based on the latest ENERGY STAR specifications. Heating and cooling equipment should be sized according to ACCA Manual S specifications; ducts should be sized to Manual D specifications; both should be based on Manual J load calculations.
3. In homes with heat pumps, programmable thermostats must have "ramp-up" technology to prevent the excessive use of electric back-up heating.
4. In homes with oil or gas hydronic equipment, domestic water heating must be provided by the space heating boiler (tankless).
5. Ducts must be sealed and tested to 4 cfm to outdoors / 100 sq. ft. of conditioned floor area. Duct leakage must be determined and documented by a RESNET-certified rater using a RESNET-approved testing protocol.
6. To prevent condensation, a minimum of R-4 insulation is recommended for ducts in conditioned space.
7. Insulation shall meet the prescriptive requirements of the 2004 IECC table 402.1 or the U_o performance requirements of table 402.1.2.
8. Tested envelope leakage must be determined and documented by a RESNET-certified rater using a RESNET-approved testing protocol.
9. To ensure consistent exchange of indoor air, installation of a mechanical ventilation system that meets the minimum requirements of ASHRAE Standard 62.2 is recommended.
10. All items on the Thermal Bypass Inspection Checklist must be verified. The Checklist includes the following 12 areas:
    1. Shower/Tub at Exterior Wall
    2. Insulated Floor above Garage
    3. Attic Knee Walls
    4. Attic Hatch/Drop-down Stair
    5. Cantilevered Floor
    6. Duct Shafts
    7. Flue Shaft
    8. Piping Shaft/ Penetrations
    9. Dropped Ceiling/Soffit
    10. Fireplace Wall
    11. Staircase Framing at Exterior Wall/Attic
    12. Whole-house Fan Attic Penetration
11. The specifications for ENERGY STAR qualified windows can be found at www.energystar.gov. For homes with window area exceeding 21% window to floor area (WFA), the following additional requirements apply:
    a. In IECC Climate Zones 1, 2 and 3, an improved window Solar Heat Gain Coefficient (SHGC) is required and is determined by:

       Required SHGC = [0.18 / WFA] * [ENERGY STAR SHGC]

       Where the ENERGY STAR SHGC is the minimum required SHGC of a climate appropriate ENERGY STAR qualified window.

       Note: Solar window screens may be used to meet required SHGC beyond the ENERGY STAR SHGC. The overall SHGC for a window unit with solar screen is determined by the following equation:

       [(window SHGC) x (solar screen SHGC) x (% area covered)] + [window SHGC x % area not covered].

    b. In IECC Climate Zones 5, 6, 7 and 8, an improved window U-Value is required and is determined by:

       Required U-Value = [0.18 / WFA] * [ENERGY STAR U-Value]

       Where the ENERGY STAR U-Value is the minimum required U-Value of a climate appropriate ENERGY STAR qualified window.
12. Any combination can be installed to meet this requirement. ENERGY STAR qualified lighting fixtures installed in the following locations can not be counted towards compliance with the ENERGY STAR reference home: storage rooms of any kind (e.g., closets, pantries, sheds), laundry rooms or garages. Additional efficiency and savings can be achieved by installing other ENERGY STAR qualified products throughout the house (e.g., additional lighting, appliances, etc.). For more information, visit www.energystar.gov.
13. EPA currently plans to require the ENERGY STAR Advanced Lighting Package (ALP) in 2009. To learn more, refer to the ALP quick link at www.energystar.gov/homes.

Thermal Bypass Inspection Checklist
ENERGY STAR Qualified Homes *[DRAFT 2/8/05]*

Thermal Bypass	What to Inspect	Complies (Y/N)
1. Shower/Tub at Exterior Wall	Exterior walls behind tub or shower have been fully insulated	
	Exterior walls behind tub or shower have been faced with air barrier material	
2. Insulated Floor above Garage	Floor framing is completely filled with insulation or insulation is snug against sub-floor	
	Air barrier is installed at any exposed edges of insulation	
3. Attic Knee Walls	Air barrier is installed on attic side of insulated wall	
	Insulation is in complete alignment with interior wall finish	
4. Attic Hatch/Drop-down Stair	Attic opening is fully gasketed for an air-tight fit	
	Hatch is covered with insulation that is attached and fits snugly in framed opening	
5. Cantilevered Floor	Floor framing is completely filled with insulation or insulation is snug against sub-floor	
	Air barrier installed at any exposed edges of insulation	
6. Duct Shafts	Opening is enclosed as required with flashing and any remaining gaps are sealed with caulk or foam	
7. Flue Shaft	Opening is fully enclosed as required with flashing	
	Combustion clearance between flue and combustible flashing (e.g., OSB panel) are properly closed with metal collars and any remaining gaps are sealed with fire-proof caulk or foam	
8. Piping Shaft/ Penetrations	Opening is fully enclosed as required with flashing and any remaining gaps are sealed with caulk or foam	
9. Dropped Ceiling/ Soffit	Air barrier is fully aligned with insulated framing and any gaps are fully sealed with caulk or foam	
10. Fireplace Wall	Air barrier is fully aligned with insulated framing in framed shaft behind fireplace and any gaps are fully sealed with caulk or foam	
11. Staircase Framing at Exterior Wall/Attic	Air barrier is fully aligned with insulated framing and any gaps are fully sealed with caulk or foam	
12. Whole-house Fan Attic Penetration	An insulated cover is provided that is gasketed to the framed opening	